Computers. Furthermore, although specific command language has been described, other command language can also be used to invoke the underlying processes of this invention.

We claim:

1. A data processing system for controlling versions of objects, comprising,

a storage device for storing a plurality of versions of a set of objects,

a processor for executing instructions and for accessing a subset of the set of objects, which includes retrieving objects from and storing objects to the storage device, during a process, and

an auditor for determining the subset of objects accessed by the processor during a process, the auditor auditing the instructions being executed by the processor during the process and recording, as an entry in an audit record, each version of each object within said subset of objects accessed during the process, as said version of said object is being accessed by the processor during the process.

2. The data processing system of claim 1, wherein the process produces derived objects, and the audit record is associated with the produced derived objects.

3. The data processing system of claim 2, wherein the process is a system build.

4. The data processing system of claim 2, wherein the process starts the auditor prior to executing instructions which produce derived objects, and stops the auditor when those instructions are completed.

5. The data processing system of claim 1, wherein the process comprises any arbitrary sequence of instructions.

6. The data processing system of claim 5, wherein the auditor starts before the process is begun and stops after the process is completed.

7. The data processing system of claim 1, wherein the auditor records version information for an accessed data object only once during a process regardless of the number of accesses made to that data object during the process.

8. The data processing system of claim 7, further comprising:

an audit cache memory for storing most recent audit entries to the audit record made by the auditor while producing an audit record for a process.

9. The data processing system of claim 1, further comprising a linker for linking a common identifying label to each object version whose identity is recorded as an entry in an audit record associated with the identifying label.

10. The data processing system of claim 1, further comprising an audit record comparator for comparing audit records to determine the difference between object versions used in building the derived objects associated with the compared audit records.

11. A method for controlling versions of objects, comprising the steps of

storing a plurality of versions of one or more objects on a storage device,

providing a processor for executing instructions and for accessing a subset of the set of objects, which includes retrieving objects from and storing objects to the storage device during a process, and

determining the subset of objects are accessed by the processor during a process, wherein the instructions executed by the processor during the process are audited, and each version of each object within said subset of object accessed during the process is recorded, as an entry in an audit record, as said version of said object is being accessed by the processor during the process.

12. The method of claim 11, further comprising the steps of

producing derived objects and an audit record by the process, and

associating the produced derived objects with the audit record.

13. The method of claim 12, wherein the process is a system build.

14. The method of claim 12, wherein the recording step comprises starting the recording step prior to executing instructions of the process which produce derived objects, and stopping the auditor when those instructions are completed.

15. The method of claim 11, wherein the process comprises any arbitrary sequence of instructions.

16. The method of claim 15, wherein the recording step comprises starting the recording before the process is begun and stopping the recording after the process is completed.

17. The method of claim 11, wherein the recording step records version information for an accessed data object only once during a process regardless of the number of accesses made to that data object during the process.

18. The method of claim 17, further comprising the step of storing to an audit cache memory most recent audit entries made to the audit record while producing an audit record for a process.

19. The method of claim 11, further comprising the step of linking a common identifying label to each object version whose identity is recorded as an entry in an audit record associated with the identifying label.

20. The method of claim 11, further comprising the step of comparing a plurality of audit records to determine the difference between object versions used in building the derived objects associated with the compared audit records.

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